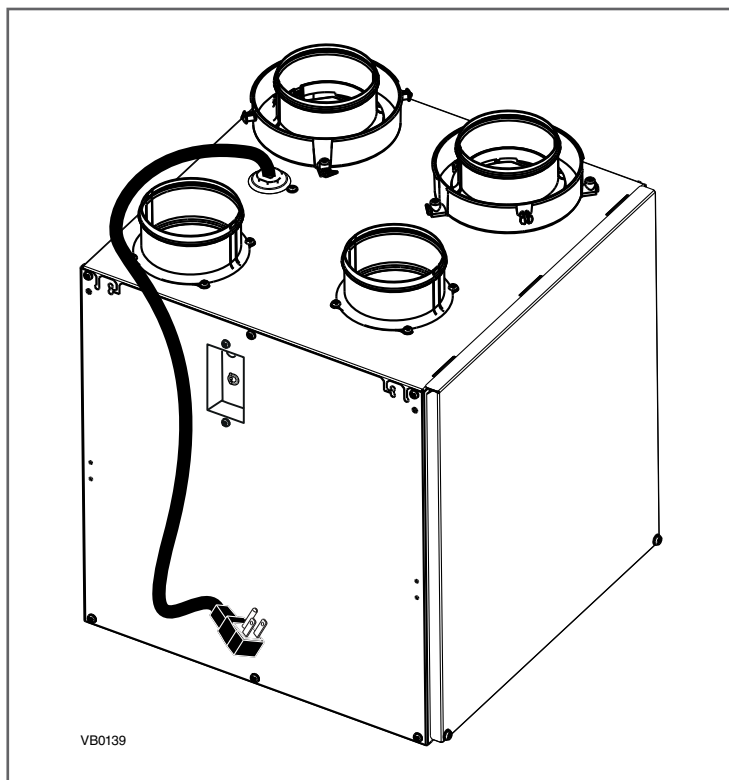

INSTALLATION GUIDE

VENTILATION SYSTEMS



FOR RESIDENTIAL INDOOR USE ONLY



VENMAR AVS K7 HRV (PART NO. 44150)

VÄNEE 40H (PART NO. 44250)

PLEASE READ AND SAVE THESE INSTRUCTIONS



7 72371 13060 9

21775 rev. 01

ABOUT THIS MANUAL

Please take note that this manual uses the following symbols to emphasize particular information:

WARNING

Identifies an instruction which, if not followed, might cause serious personal injuries including possibility of death.

CAUTION

Identifies an instruction which, if not followed, may severely damage the unit and/or its components.

NOTE: Indicates supplementary information needed to fully complete an instruction.

We welcome any suggestions you may have concerning this guide and/or the unit, and we would appreciate hearing your comments on ways to better serve you. Please contact us by phone at 1-800-567-3855.

ABOUT THESE UNITS

LIMITATION

For residential (domestic) installation only. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSON(S) OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning the unit, disconnect power cord from electrical outlet.
3. This unit is not designed to provide combustion and/or dilution air for fuel-burning appliances.
4. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
5. Do not use the units with any solid-state speed control device other than the following optional controls: Dehumidistat, 20-minute lighted push-button timer and 60-minute crank timer.
6. This unit must be grounded. The power supply cord has a 3-prong grounding plug for your personal safety. It must be plugged into a mating 3-prong grounding receptacle, grounded in accordance with the national electrical code and local codes and ordinances. Do not remove the ground prong. Do not use an extension cord.
7. Do not install in a cooking area or connect directly to any appliances.
8. Do not use to exhaust hazardous or explosive materials and vapors.
9. When performing installation, servicing or cleaning the unit, it is recommended to wear safety glasses and gloves.
10. When applicable local regulations comprise more restrictive installation and/or certification requirements, the aforementioned requirements prevail on those of this document and the installer agrees to conform to these at his own expenses.

ABOUT THESE UNITS (CONT'D)

CAUTION

1. To avoid premature clogged filters, turn OFF the unit during construction or renovation.
2. Please read specification label on product for further information and requirements.
3. Be sure to duct air outdoors – Do not intake/exhaust air into spaces within walls or ceiling or into attics, crawl spaces, or garage.
4. Intended for residential installation only in accordance with the requirements of NFPA 90B (for a unit installed in U.S.A.) or Part 9 of the National Building Code of Canada (for a unit installed in Canada).
5. Do not run any air ducts directly above or closer than 2 ft (0.61 m) to any furnace or its supply plenum, boiler, or other heat producing appliance. If a duct has to be connected to the furnace return plenum, it must be connected not closer than 9' 10" (3 m) from this plenum connection to the furnace.
6. The ductwork is intended to be installed in compliance with all applicable codes.
7. When leaving the house for a long period of time (more than two weeks), a responsible person should regularly check if the unit operates adequately.
8. If the ductwork passes through an unconditioned space (e.g.: attic), the unit must operate continuously except when performing maintenance and/or repair. Also, the ambient temperature of the house should never drop below 18°C (65°F).

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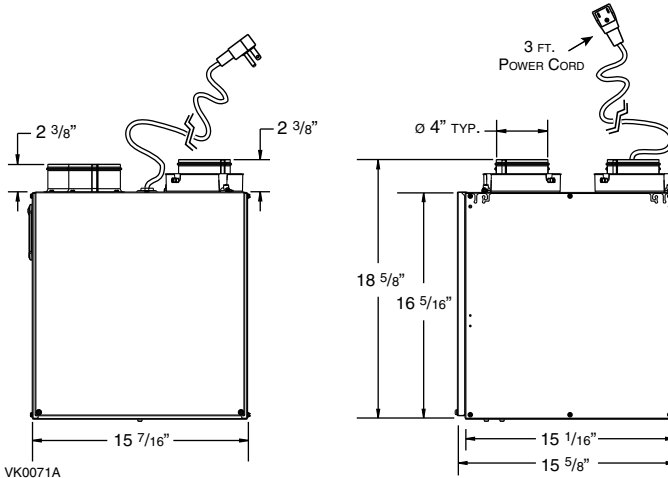
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1. TECHNICAL DATA

1.1 DEFOST CYCLE

DEFROSTING	OPERATION BETWEEN EACH DEFROST
5	25

1.2 DIMENSIONS



2. TYPICAL INSTALLATIONS

Use the following illustrations as guidelines to help you decide on how the unit will be installed. The unit should be hung from the joists.

If required, bathroom fans and a range hood may be used to exhaust stale air. Also, for homes with more than one level, we recommend one exhaust register at the highest level.

There are 2 installation methods: Fully ducted and Central Draw Point.

NOTE: An electrical outlet has to be available within 3 feet of the unit.

2.1 FULLY DUCTED SYSTEM

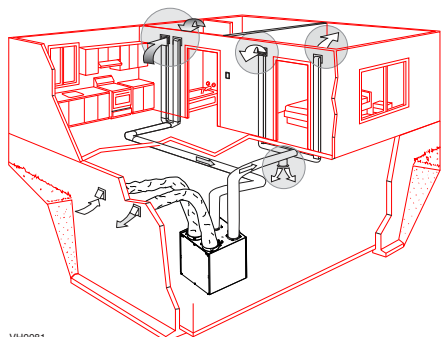
(PRIMARYLY FOR HOMES WITH RADIANT HOT WATER OR ELECTRIC BASEBOARD HEATING)

Stale air coming from the registers located at the highest level of the house is exhausted to the outdoors.

Fresh air from outside is filtered and supplied by the register located in the lowest liveable level.

Homes with more than one level require at least one exhaust register at the highest level.

See figure at right.



2. TYPICAL INSTALLATIONS (CONT'D)

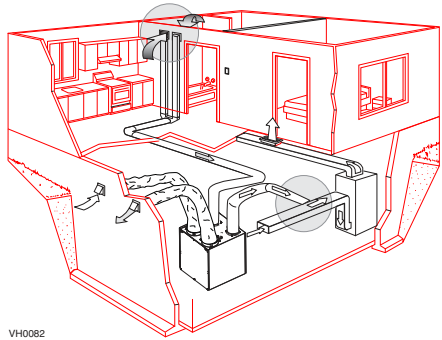
2.2 CENTRAL DRAW POINT (CONNECTION TO A FORCED AIR SYSTEM)

Stale air coming from the registers located at the highest level of the house is exhausted to the outdoors.

Fresh air from outdoors is filtered and supplied to the return (plenum) or the supply duct of the forced air unit. See figure at right.

For this type of installation, it is not essential that the forced air system blower runs when the unit is in operation, but we recommend it.

NOTE: Home with multiple forced air systems should have one unit on each system.



3. INSTALLATION

3.1 INSPECT THE CONTENT OF THE BOX

Inspect the exterior of the unit for shipping damage. Ensure that there is no damage to the door, ports, power cord, etc.

3.2 LOCATING THE UNIT

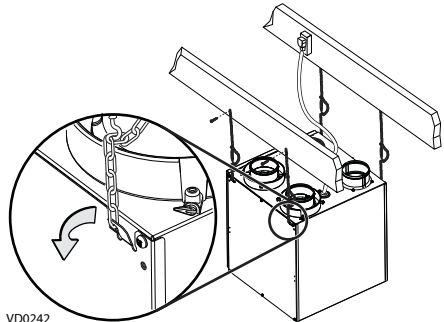
Choose an appropriate location for the unit.

- Within an area of the house **where the ambient temperature is between 10°C (50°F) and 50°C (122°F)** (basement, furnace room, closet, etc.)
- Away from living areas (dining room, living room, bedroom), if possible
- So as to provide easy access to the interior of the unit, for maintenance
- Close to an exterior wall, so as to limit the length of the insulated flexible duct to and from the unit
- Away from hot chimneys and other fire hazards
- Allow for a power source (standard 3-prong grounding outlet)
- Close to a drain. If no drain is close by, use a pail to collect run-off

Slightly bend all 4 hooks located on both sides of the unit in order to hang it to ceiling joists with the 4 chains and springs provided.

See illustration beside.

CAUTION
Make sure the unit is level.



3. INSTALLATION (CONT'D)

3.3 PLANNING OF THE DUCTWORK

- Keep it simple. Plan for a minimum of bends and joints
- Keep the length of insulated ducts to a minimum
- Do not ventilate crawl spaces or cold rooms. Do not attempt to recover the exhaust air from a dryer or a range hood. This would cause clogging of the filters and recovery module
- If the house has two floors or more, be sure to plan for at least one exhaust register on the highest lived-in level

3.4 INSTALLING THE DUCTWORK AND REGISTERS

3.4.1 FULLY DUCTED SYSTEM (AS ILLUSTRATED IN SECTION 2.1)

⚠ WARNING

Never install a stale air exhaust register in a closed room where a combustion device operates, such as a gas furnace, a gas water heater or a fireplace.

Stale air exhaust ductwork

- Install the stale air exhaust registers where the contaminants are produced: kitchen, living room, etc. Position the registers as far from the stairway as possible and in such a way that the air circulates in all the lived-in spaces in the house
- If a register is installed in the kitchen, it must be located at least 4 feet (1.2 m) from the range
- Install the registers 6 to 12 inches (152 to 305 mm) from the ceiling on an interior wall OR install them in the ceiling
- If possible, measure the velocity of the air flowing through the registers. If the velocity is higher than 400 ft/min (122 m/min), then the register type is too small. Replace with a larger one

Fresh air distribution ductwork

- Install the fresh air distribution registers in bedrooms, dining rooms, living room and basement
- Keep in mind that the fresh air registers must be located as far as possible from the stale air registers
- Install the registers either in the ceiling or high on the walls with air flow directed towards the ceiling. (The cooler air will then cross the upper part of the room and mix with room air, before descending to occupant's level)
- If a register must be floor installed, direct the airflow up the wall

3. INSTALLATION (CONT'D)

3.4 INSTALLING THE DUCTWORK AND REGISTERS (CONT'D)

3.4.2 CENTRAL DRAW POINT SYSTEM (AS ILLUSTRATED IN SECTION 2.2)

Stale air exhaust ductwork

Same as for Fully Ducted System, described on point 3.4.1

⚠ WARNING

When performing duct connections, always use approved tools and materials. Respect all corresponding laws and safety regulations. Please refer to your local building code.

CAUTION

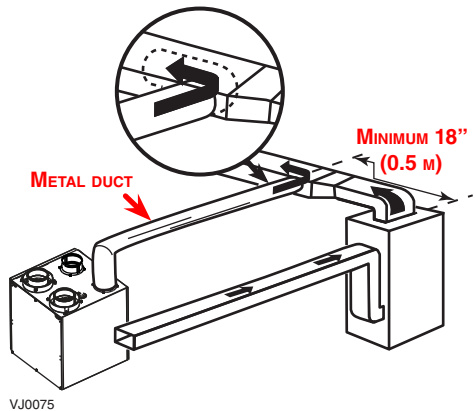
When performing duct connections to the furnace supply duct, this duct must be sized to support the additional airflow produced by the unit. Also, the use of metal duct is highly recommended.

Fresh air distribution ductwork

There are 2 methods for connecting the unit to the furnace/air handler:

Method 1: Supply side connection

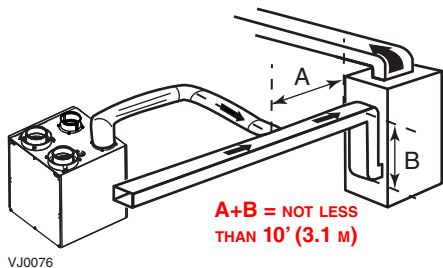
- Cut an opening into the furnace supply duct at least 18 inches (0.5 m) from the furnace/air handler
- Connect this opening to the **Fresh air distribution** port of the unit (use **metal duct**, see figure beside)
- Make sure the unit duct forms an elbow inside the furnace/air handler ductwork.



Method 2: Return side connection

- Cut an opening into the furnace return duct not less than 10 feet (3.1 m) from the furnace/air handler (A+B)
- Connect this opening to the **Fresh air distribution** port of the unit (see figure beside)

NOTE: For Method 2, it is not essential that the furnace/air handler runs when the unit is in operation, but we recommend it.



3. INSTALLATION (CONT'D)

3.5 CONNECTING THE DUCTS TO THE UNIT

NOTE: All units ports were created to be connected to ducts having a minimum of 4" diameter, but if need be, they can be connected to bigger sized ducts by using an appropriate transition (e.g.: 4" diameter to 5" diameter transition).

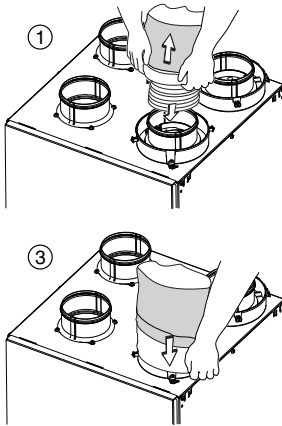
Insulated flexible ducts

Use the following procedure to connect the insulated flexible ducts to the ports of the unit (exhaust air to outdoors and fresh air from outdoors ports).

CAUTION

Make sure the vapor barrier on the insulated ducts does not tear during installation to avoid condensation within the ducts.

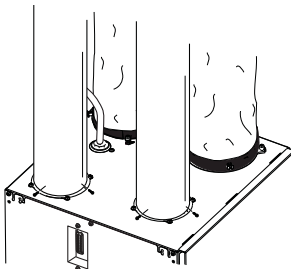
1. Pull back the insulation to expose the flexible duct.
2. Attach the flexible duct to the port using tie wrap.
3. Pull the insulation over the joint and tuck in between the inner and outer rings of the double collar.
4. Pull down the vapor barrier (shaded part in illustrations below) over the outer ring to cover it completely. Apply duct tape to the joint making an airtight seal. Avoid compressing the insulation when pulling the tape tightly around the joint.



VJ0080

Non-insulated rigid ducts

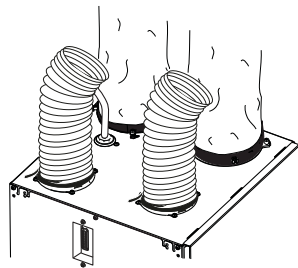
Use metal screws and duct tape to connect the rigid ducts to the unit port.



VJ0073

Non-insulated flexible ducts

Use tie wraps to connect the flexible ducts to the unit port.



3. INSTALLATION (CONT'D)

3.6 INSTALLING THE EXTERIOR HOODS

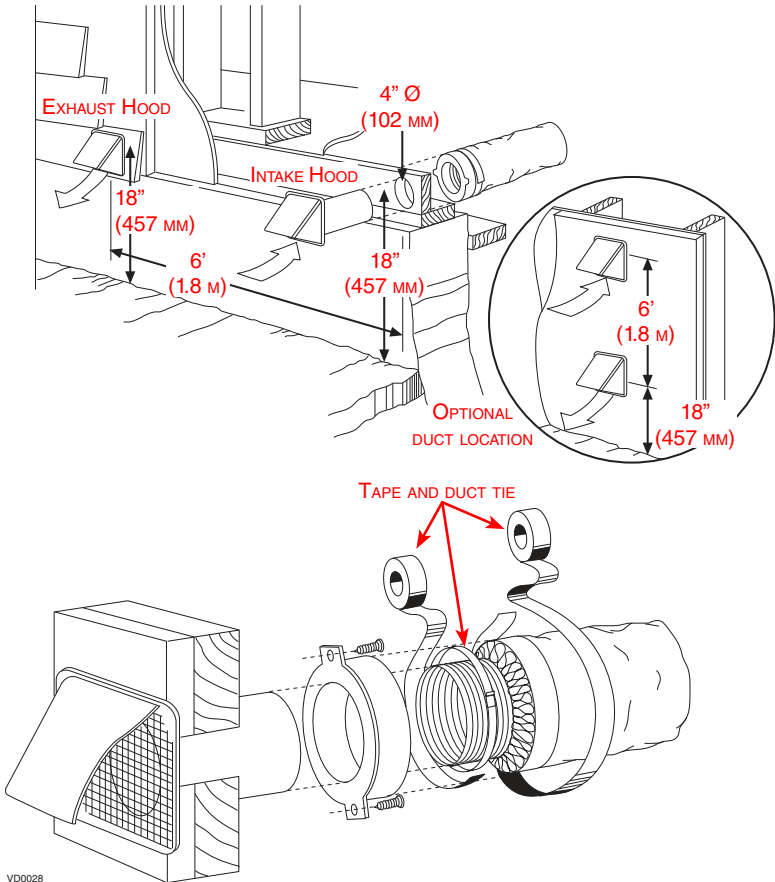
Choose an appropriate location to install the exterior hoods:

- At a minimum distance of 6 feet (1.8 m) between the hoods to avoid cross-contamination
- At a minimum distance of 18 inches (457 mm) from the ground

⚠ WARNING

Make sure the intake hood is at least 6 feet (1.8 m) away from any of the following:

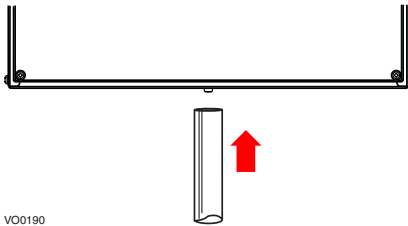
- **Dryer exhaust, high efficiency furnace vent, central vacuum vent**
- **Gas meter exhaust, gas barbecue-grill**
- **Any exhaust from a combustion source**
- **Garbage bin and any other source of contamination**



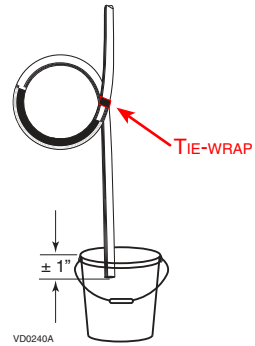
Refer to illustration above to connect the insulated duct to the hoods. Place a "FRESH AIR INTAKE" sticker on corresponding hood. An "Anti-Gust Intake Hood" should be installed in regions where a lot of snow is expected to fall.

3. INSTALLATION (CONT'D)

3.7 CONNECTING THE DRAIN



Connect the plastic tube to the inner drain fitting located under the unit (as shown above).



Make a water trap loop in the tube to prevent the unit from drawing unpleasant odors from the drain source. Run the tube to the floor drain or to an alternative drain pipe or pail.

IMPORTANT

If using a pail to collect water, locate the tube end approximately 1" from the top of the pail in order to prevent water from being drawn back up into the unit.

4. CONTROLS

4.1 INTEGRATED CONTROL

UNIT BOOTING SEQUENCE

The unit booting sequence is similar to a personal computer boot sequence. Each time the unit is plugged after being unplugged, or after a power failure, it will perform a 30-second booting sequence before starting to operate.

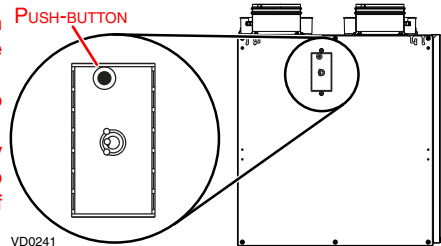
NOTE: No command will be taken until the unit is fully booted.

⚠ WARNING

Risk of electrical shocks. The unit CANNOT be turned off using its push-button control. Before performing any maintenance or servicing, always disconnect the unit from its power source.

The unit is equipped with an integrated control, located on the upper left side of the unit.

Use the push-button to activate two modes: Standby and Low Speed. Plug the unit (the unit is now on Standby mode). Press on the push-button to turn the unit on Low Speed mode (if need be).



Standby Mode	Standby Mode	High speed
Low Speed Mode	Low Speed Mode	High speed

4. CONTROLS (CONT'D)

4.2 ELECTRICAL CONNECTION TO OPTIONAL CONTROL(S)

For more convenience, this unit can be controlled using optional control(s).

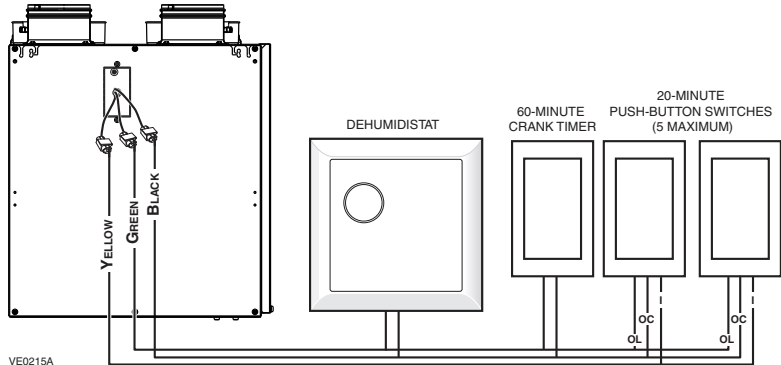
⚠ WARNING

Always disconnect the unit before making any connections. Failure in disconnecting power could result in electrical shock or damage of the wall control or electronic module inside the unit.

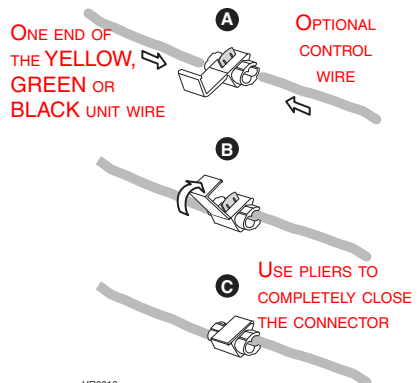
CAUTION

Make sure that the wires do not short-circuit between themselves or by touching any other components on the wall control. Avoid poor wiring connections. To reduce electrical interference (noise) potential, do not run wall control wiring next to control contactors or near light dimming circuits, electrical motors, dwelling/building power or lighting wiring, or power distribution panel.

If applicable, connect the optional control(s) wires to the unit using the included connectors (as shown below).



- NOTES: 1. If an optional control is used, it will set the unit on high speed when activated.
2. For information about the operation of the wall controls, refer to the user guide.

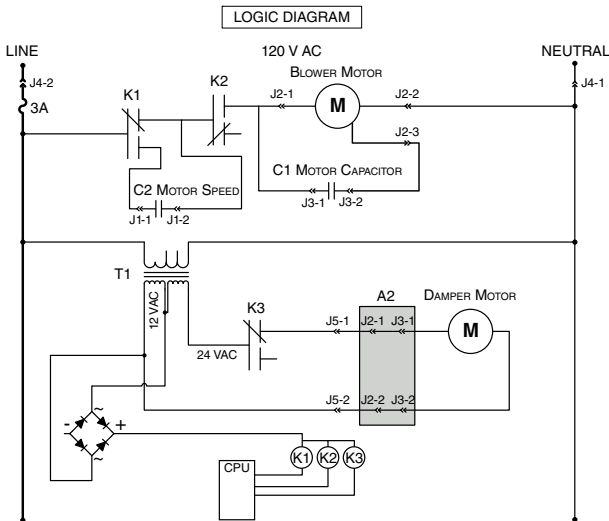
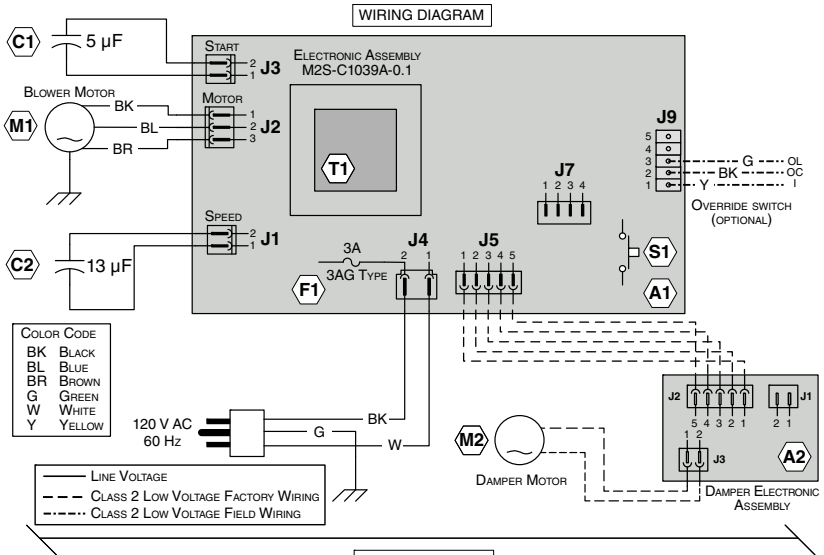


The illustrations to the right show how to use the included connectors.

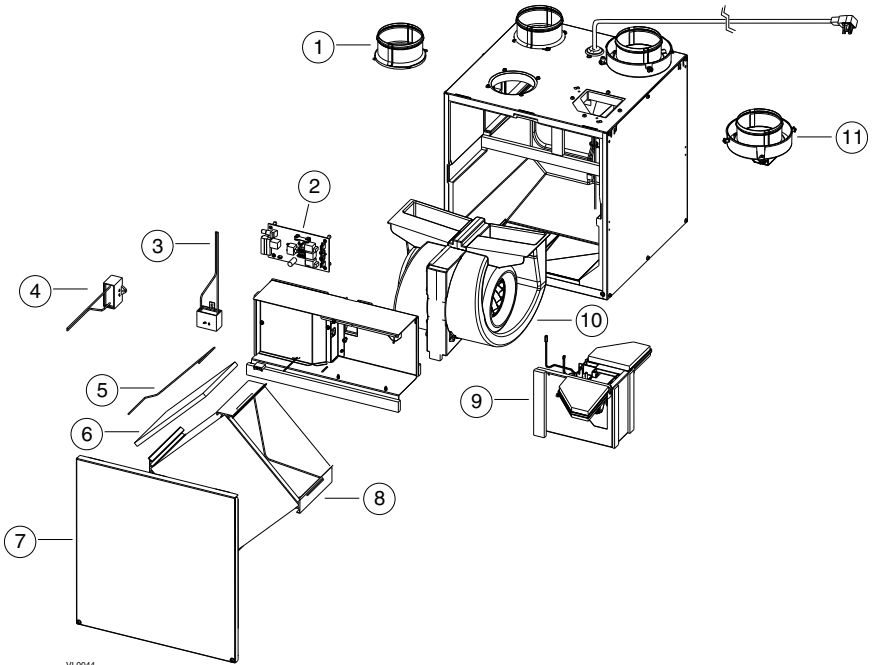
5. WIRING DIAGRAM

⚠ WARNING

- Risk of electrical shocks. Before performing any maintenance or servicing, always disconnect the unit from its power source.
- This product is equipped with an overload protection (fuse). A blown fuse indicates an overload or a short-circuit situation. If the fuse blows, unplug the product from the outlet. Replace the fuse as per the servicing instructions (refer to wiring diagram for proper fuse rating) and verify the product. If the replaced fuse blows, it may be a short-circuit and the product must be discarded or returned to an authorized service center for examination and/or repair.



6. SERVICE PARTS



VL0044

1	4" ROUND METAL PORT	2	18854	18854
2	ELECTRONIC BOARD	1	19205	19205
3	CAPACITOR 5 μ F	1	16042	16042
4	CAPACITOR 13 μ F	1	19210	19210
5	FILTER RETAINING WIRES (PAIR)	1	19208	19208
6	CORE FILTERS (PAIR)	1	18883	18883
7	DOOR ASSEMBLY	1	19201	19203
8	HEAT RECOVERY CORE	1	18884	18884
9	DAMPER SYSTEM ASSEMBLY	1	18882	18882
10	BLOWER ASSEMBLY	1	18867	18867
11	4" ROUND PORT WITH PLASTIC COLLAR	2	18866	18866
12	HARDWARE KIT (NOT ILLUSTRATED)	1	19214	19214

REPLACEMENT PARTS AND REPAIR:

In order to ensure your ventilation unit remains in good working condition, you must use the manufacturer genuine replacement parts only. The manufacturer replacement parts are specially designed for each unit and are manufactured to comply with all the applicable certification standards and maintain a high standard of safety. Any third party replacement part used may cause serious damage and drastically reduce the performance level of your unit, which will result in premature failing. The manufacturer recommends to contact a certified service depot for all replacement parts and repair.

7. TROUBLESHOOTING

PROBLEMS	POSSIBLE CAUSES	YOU SHOULD TRY THIS
1. Unit does not work.	<ul style="list-style-type: none"> • The unit might be on standby mode. • The circuit board may be defective. • The fuse may be blown. • The damper actuator may not work. 	<ul style="list-style-type: none"> • Press on the unit control switch (see section 4.1). • Unplug the unit. Disconnect the optional(s) control(s) (if need be). Jump BLACK and GREEN wires. Plug the unit. If the motor runs on high speed and the damper opens, the circuit board is not defective. • Unplug the unit. Check if the fuse on the unit circuit board is blown (the strand is broken). If it is blown, replace the fuse according to the specifications on the wiring diagram of the unit. • See point 2.
2. The damper actuator does not work.	<ul style="list-style-type: none"> • The 5-pin connector may have a loose connection. • The damper actuator OR the damper mechanism may be defective. • The circuit board may be defective. 	<ul style="list-style-type: none"> • Unplug the unit and check to make sure all the crimp connections are secured. Check the damper actuator connections as well. • Unplug the unit. Disconnect the optional control(s) (if need be). Wait 10 seconds and plug the unit back. Check if the damper opens. If not, use a multimeter and check for 24 V AC on J5-1 and J5-2 (in electrical compartment). If there is 24 V AC, replace the entire damper assembly. • If there is no 24 V AC, replace the circuit board.
3. The Dehumidist does not work OR the 20-minute push-button timer does not work OR its indicator light does not stay on.	<ul style="list-style-type: none"> • The wires may be in reverse position. • The wires may be broken. • The wire in the wall OR the wall control may be defective. • The circuit board may be defective. 	<ul style="list-style-type: none"> • Ensure that the wires have been connected to their appropriate place. • Inspect every wire and replace any that are damaged. • Jump BLACK and GREEN wires. If unit switches to high speed, remove the wall control and test it right beside the unit using another shorter wire. If the wall control works there, change the wire. If it does not, change the wall control. • If the unit does not switch to high speed, replace the circuit board.
4. The motor does not work.	<ul style="list-style-type: none"> • The fuse may be defective. • The motor may be defective. 	<ul style="list-style-type: none"> • Check if fuse F1 (located on PCB) is blown. In that case, replace fuse F1 as per wiring diagram specifications. • Using a multimeter, check the ohms value on the motor connectors. For BLUE and BLACK motor wires, the right value is ± 68 ohms. For BLUE and BROWN motor wires, the right value is ± 58 ohms. For BROWN and BLACK motor wires, the right value is ± 126 ohms. If the ohms values are the same, the motor is not defective. Replace the motor capacitor.
5. The defrost cycle does not work (the fresh air duct is frozen OR the fresh air distributed is very cold).	<ul style="list-style-type: none"> • Ice deposits may be hindering the damper operation. • The damper mechanism may be broken. • The damper actuator or circuit board may be defective. 	<ul style="list-style-type: none"> • Remove the ice. • Inspect this part and replace if necessary. • See point 2.